

REMARKS

Claim 18 has been amended to obviate the objection thereto.

Claims 1-18 and 28-34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Mo ('959) in view of Criton ('356), Rubin and Schechter.

Claims 1-18 and 28-34 recite a method of measuring ventricular dysynchrony of a heart. The Mo reference relates to the measurement of blood velocity within a blood vessel. There is no teaching or suggestion of the use of gated detection of heart wall motion, particularly along two distinct (septal and lateral) heart wall locations. The Office Action appears to indicate that the statement in Mo at Col. 1, lines 58-63 that "it would be interesting to monitor the flow profile changes in conjunction with vessel wall movements over the cardiac cycle" somehow would suggest to one of ordinary skill in the art that Mo could be readily modified with the teachings of Criton, Rubin and Schechter to practice the presently claimed invention. Applicants respectfully traverse this rejection. There is no other teaching in Mo regarding vessel wall movement. Mo does indicate at Col. 3, line 62 - Col. 4, line 4, that the "range gates are coupled to a wall filter function." There is no indication that wall movement itself is used to provide any useful information.

The Criton reference discloses a technique for edge detection of borders of the heart wall. However, there is no description or

suggestion of a process using at least two distinct gated Doppler lines to measure heart wall dysynchrony, or to use such measurements in selecting lead delay settings for a pacemaker. Note specifically the location of cursor M in Fig. 2 of Criton indicating a direction of scan across the left ventricle. This is in contrast to claim 1, for example, which recites first and second spectral Doppler lines, which are used, for example, as shown in Fig. 12, 13A, and 13B to mark separate walls having movement that is out of phase. Criton does not teach or suggest how to use separate lines to measure separate wall locations to thereby measure dysynchrony.

Rubin discloses the use of a range gate in connection with a heart wall to assist with gated imaging. However, Fig. 5 of Rubin indicates that placement of the gate 226 can be made anywhere on the heart wall. Again, there is no suggestion that such gating be used to obtain diagnostically useful information from the heart wall motion itself.

Although Schechter describes heart wall dysynchrony, this reference provides no details regarding how ultrasound measurements of heart wall motion can be made as set forth in the pending claims.

New claims 41-44 have been added reciting further patentable aspects relative to the prior art. Reconsideration is respectfully requested.

The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

HE ET AL.

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